

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Shinichi Kurita et al.
Serial No. : 10/782,503
Filed : February 19, 2004
For : METHODS AND APPARATUS FOR DETERMINING A
POSITION OF A SUBSTRATE RELATIVE TO A
SUPPORT STAGE
Examiner : Emily Y. Chan
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

Applicants respectfully request a review of the final rejection in the above-identified application. No amendments are being filed with this Request. This Request is being filed concurrently with a Notice of Appeal. The Review is requested for the following reasons stated on the attached sheets.

ATTACHMENT TO PRE-APPEAL BRIEF REQUEST FOR REVIEW

THE REJECTIONS ARE CLEARLY NOT PROPER AND ARE WITHOUT BASIS

In the Final Office Action (dated August 28, 2007), claims 1 to 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP 09-152569 to Masayoshi et al. (hereinafter "*Masayoshi*") in view of U.S. Publication No. 2006/0145711 to Toru Honma (hereinafter "*Honma*"). The rejection of claim 1 is illustrative as to how the rejections are clearly not proper and are without basis.

The present claimed invention describes a sensing system adapted to determine a position of an edge of a substrate relative to a stage that supports the substrate. The system comprises: a plurality of probes arranged in a spaced relation around a stage that is adapted to support a substrate, wherein each probe includes a detection portion that is adapted to: move from a known starting position toward an edge of the substrate that is supported by the stage; detect the edge of the substrate while the substrate is supported by the stage by contacting the edge of the substrate; generate a detection signal following said detection; and stop moving toward the edge of the substrate following said detection; and a controller coupled to the plurality of probes and adapted to determine a position of the edge of the substrate relative to the stage based on the known starting position of each detection portion and based on the detection signal generated by each detection portion, as reflected in independent claim 1. Independent claims 16 and 20 include features similar to those

described above. Applicants respectfully submit that *Masayoshi* and *Honma*, alone or in combination, do not provide any teachings or suggestions related to detecting the edge of a substrate while the substrate is supported by the stage by **contacting the edge of the substrate**, as claimed.

With regard to the *Masayoshi* reference, it appears to teach optically detecting the periphery of a square substrate. As acknowledged by the Examiner in the Office Action dated March 26, 2007, and referred to in the Office Action dated August 28, 2007, *Masayoshi* uses edge sensors to optically detect the periphery of the substrate while the present invention provides sensors to detect the edge of the substrate by contacting the edge of the substrate. However, the Examiner relies on *Honma* to cure the deficiency of *Masayoshi* in that *Honma* discloses that "the displace sensor 11 is not limited to such a non-contact sensor but instead can be of a contact sensor". See e.g., Col. 3, paragraph [0024].

The *Honma* reference describes a plurality of probes contacting electrodes on a semiconductor, wherein the semiconductor is positioned on the top side of the mounting table. The displace sensor 11 of *Honma* is positioned in a space below the mounting table and measures, in a direction perpendicular to a major surface (bottom side) of the mounting table (and therefore semiconductor), a displacement (an amount of sinking) of the bottom side of the mounting table caused by the contact load from the probes. See e.g., paragraphs [0004] and [0011]. The

present invention, on the other hand, includes probes positioned around a stage, wherein the stage is adapted to support a substrate. The probes move from a known starting position towards an edge of the substrate (i.e., in a direction parallel to the major surface of the substrate) until they contact the edge of the substrate. In other words, it is respectfully submitted that the citation of *Honma* does not provide the Examiner with legally sufficient, *prima facie* support for the conclusion that one skilled in the art, in view of the optical sensor of *Masayoshi*, would apply the notion of "contact operation" taken from *Honma* to arrive at the claimed subject matter of detecting the edge of a substrate by contacting **the edge** of the substrate. Particularly in view of the different principles of operation involved in the cited references, e.g., perpendicular motion (*Honma*) versus parallel motion (as claimed), it is submitted that the teachings of *Honma* do not provide suitable evidence for the Examiner's contention that the claimed subject matter would be obvious to those of skill in the art over the teachings of *Masayoshi*. See *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP § 2143.01(VI).

Applicants further respectfully submit that even if the non-contact displace sensor described by *Honma* was in fact a displace contact sensor, in light of paragraph [0024] of *Honma*, the displace contact sensor would not contact the edge (in a direction parallel to the major surface of the substrate), or any surface, for that matter, of the substrate, but instead would merely contact the bottom side of the mounting table, in a direction

perpendicular to the major surface of the mounting table
(and substrate).

For at least the above-reasons, the Applicants respectfully submit that neither *Masayoshi* nor *Honma*, individually or combined, may be relied upon for teaching or suggesting the above-recited features of independent claims 1, 16 and 20, and their respective dependent claims 2 to 15, 17 to 19 and 21 to 24. Withdrawal of the rejection of claims 1-24 under 35 U.S.C. 103(a) is accordingly respectfully requested.

CONCLUSION

The Proposed combination of references relied upon in rejecting the claims under 35 U.S.C. § 103 does not teach or suggest every feature of the claims. Accordingly, the Applicants respectfully submit that the Examiner's rejections are clearly not proper, without basis, and should be withdrawn. Further, the Applicants respectfully request that the Office issue a finding that the application is allowed on the existing claims and the prosecution is closed.

Respectfully Submitted,



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